IN THE CLAIMS:

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1. (Original) A magnetoresistive sensor including a substrate, a pair of magnetic shield layers consisting of a lower magnetic shield layer and an upper magnetic shield layer, a magnetoresistive sensor layer disposed between the pair of magnetic shields, an electrode terminal for flowing a signal current perpendicular to the plane of the magnetoresistive sensor layer, and magnetic domain control layers for controlling Barkhausen noise of said magnetoresistive sensor layer, wherein said magnetic domain control layers disposed on opposite ends of the magnetoresistive sensor layer in a region from the end surface of a media-opposed surface side of the magnetoresistive sensor layer to the depth position are made of a material having a specific resistance not less than 10 mΩcm, and are in contact with at least opposite end surfaces of said magnetoresistive sensor layer in said region;

wherein a material consisting of said magnetic domain control layer is a granular layer made by mixing a hard magnetic material having high coercivity made of a metal magnetic material having as the composition elements Co (cobalt), Cr (chromium), Pt (platinum), Ta (tantalum), and Nb (niobium) with an insulating material made of Al2O3, SiO2, HfO2, TaO2, TiO2, Ta2O5, AlN, AlSiN, or ZrO2; and,

wherein said magnetic domain control layer comprises a layer made of a soft magnetic oxide material having high electric resistivity disposed in contact with opposite ends of said magnetoresistive sensor layer, and a hard magnetic layer, disposed outside the same, made of a metal magnetic material having as the composition elements Co (cobalt), Cr (chromium), Pt (platinum), Ta (tantalum), and Nb (niobium).

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2. (Withdrawn) The magnetoresistive sensor according to claim 1, comprising magnetic yoke layers disposed between the pair of magnetic shields, having a shape extended from the position exposed from the media-opposed surface in the depth direction, and guiding the magnetic field of the recording media to its interior, wherein said magnetoresistive sensor layer is disposed between the magnetic yoke layers in the position recessed from the media-opposed surface, said magnetic domain control layers are provided on opposite ends of the magnetoresistive sensor layer in a region from the end surface of the media-opposed surface side of the magnetoresistive sensor layer and the magnetic yoke layer to the depth position and are in contact with at least opposite end surfaces of said magnetoresistive sensor layer in said region, and the magnetic domain control layers are in contact with opposite end surfaces of said magnetic yoke layer in at least one portion of the region from the end surface of the media-opposed surface side of said magnetic yoke layer to the depth position.

3. (Withdrawn) The magnetoresistive sensor according to claim 1, comprising a flux guide type magnetic yoke layer disposed between the pair of magnetic shields, having a shape extended from the position exposed from the media-opposed surface in the depth position, and being in contact with any one of the magnetic shield layers to guide the magnetic flux of the media, and magnetic domain control layers for controlling Barkhausen noise of the magnetoresistive sensor layer and the flux guide type magnetic yoke layer, wherein said magnetoresistive sensor layer is disposed at the upper or lower side of said flux guide type yoke layer in the position recessed from the media-opposed surface, the

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flux guide type yoke layer has an discontinuous portion in a region in contact with said magnetoresistive sensor layer, said magnetic domain control layers disposed on opposite ends of the magnetoresistive sensor layer in the region from the end surface of the media-opposed surface side of said magnetoresistive sensor layer and said flux guide type magnetic yoke layer to the depth position are in contact with at least opposite end surfaces of said magnetoresistive sensor layer in the region from the end surface of the media-opposed surface side of said magnetoresistive sensor layer to the depth position, and the magnetic domain control layers are in contact with opposite end surfaces of said magnetic yoke layer in at least one portion of the region from the end surface of media-opposed surface side of said magnetic yoke layer to the depth position.

4. (Withdrawn) The magnetoresistive sensor according to claim 1, wherein said magnetic domain control layer is made of an underlayer made of an oxide having a thickness not more than 5 nm, and an oxide material having high electric resistivity not less than 10 mΩcm formed on the oxide underlayer.

5. (Withdrawn) The magnetoresistive sensor according to claim 2, wherein said magnetic domain control layer is made of an underlayer made of an oxide having a thickness not more than 5 nm, and an oxide material having high electric resistivity not less than 10 mΩcm formed on the oxide underlayer.

6. (Withdrawn) The magnetoresistive sensor according to claim 3, wherein said magnetic domain control layer is made of an underlayer made of an oxide

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having a thickness not more than 5 nm, and an oxide material having high electric resistivity not less than 10 mΩcm formed on the oxide underlayer.

7. (Withdrawn) A magnetoresistive sensor including a substrate, a pair of magnetic shield layers consisting of a lower magnetic shield layer and an upper magnetic shield layer, a magnetoresistive sensor layer disposed between the pair of magnetic shields, an electrode terminal for flowing a signal current perpendicular to the plane of the magnetoresistive sensor layer, and magnetic domain control layers for controlling Barkhausen noise of said magnetoresistive sensor layer, wherein a material consisting of said magnetic domain control layers disposed on opposite ends of the magnetoresistive sensor layer in the region from the end surface of the media-opposed surface side of the magnetoresistive sensor layer to the depth position is a compound having a composition of R2O3 containing at least R (R= Fe, Co, Mn, and Ni) and oxygen (O) and has a spinel lattice and a (400) orientation plane, and the magnetic domain control layers are in contact with at least opposite end surfaces of said magnetoresistive sensor layer in said region.

8. (Withdrawn) The magnetoresistive sensor according to claim 7, comprising magnetic yoke layers disposed between the pair of magnetic shields, having a shape extended from the position exposed from the media-opposed surface in the depth direction, and guiding the magnetic field of the recording media to its interior, wherein said magnetoresistive sensor layer is disposed between the magnetic yoke layers in the position recessed from the media-opposed surface, materials consisting of said magnetic domain control layers disposed on opposite

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ends of the magnetoresistive sensor layer in the region from the end surface of the media-opposed surface side of the magnetoresistive sensor layer and the magnetic yoke layer to the depth position are in contact with at least opposite end surfaces of said magnetoresistive sensor layer in the region from the end surface of the media-opposed surface side of the magnetoresistive sensor layer to the depth position, and the magnetic domain control layers are in contact with opposite end surfaces of said magnetic yoke layer in at least one portion of the region from the end surface of the media-opposed surface side of said magnetic yoke layer to the depth position.

9. (Withdrawn) The magnetoresistive sensor according to claim 7, comprising a flux guide type magnetic yoke layer disposed between the pair of magnetic shields, having a shape extended from the position exposed from the media-opposed surface in the depth position, and being in contact with any one of the magnetic shield layers to guide the magnetic flux of the media, and magnetic domain control layers for controlling Barkhausen noise of the magnetoresistive sensor layer and the flux guide type magnetic yoke layer, wherein said magnetoresistive sensor layer is disposed at the upper or lower side of said flux guide type yoke layer in the position recessed from the media-opposed surface, the flux guide type yoke layer has an discontinuous portion in the region in contact with said magnetoresistive sensor layer, said magnetic domain control layers disposed on opposite ends of the magnetoresistive sensor layer in the region from the end surface of the media-opposed surface side of said magnetoresistive sensor layer and said flux guide type magnetic yoke layer to the depth position are in contact with at least opposite end surfaces of said magnetoresistive sensor layer in the region

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from the end surface of the media-opposed surface side of said magnetoresistive sensor layer to the depth position, and the magnetic domain control layers are in contact with opposite end surfaces of said magnetic yoke layer in at least one portion of the region from the end surface of media-opposed surface side of said magnetic yoke layer to the depth position.

10. (Withdrawn) The magnetoresistive sensor according to claim 7, wherein a material consisting of the oxide underlayer of said magnetic domain control layer is a compound of RO consisting of at least R(R=Co, Mg, Ni, Eu, Fe, and Zn) and oxygen (O) and has a NaCl structure and a (200) orientation plane, and a material consisting of said magnetic domain control layer on the oxide underlayer is a compound having a composition of R203 containing at least R (R= Fe, Co, Mn, and Ni) and oxygen (O) and has a spinel lattice and a (400) orientation plane.

11. (Withdrawn) The magnetoresistive sensor according to claim 8, wherein a material consisting of the oxide underlayer of said magnetic domain control layer is a compound of RO consisting of at least R(R=Co, Mg, Ni, Eu, Fe, and Zn) and oxygen (O) and has a NaCl structure and a (200) orientation plane, and a material consisting of said magnetic domain control layer on the oxide underlayer is a compound having a composition of R203 containing at least R (R= Fe, Co, Mn, and Ni) and oxygen (O) and has a spinel lattice and a (400) orientation plane.

12. (Withdrawn) The magnetoresistive sensor according to claim 9, wherein a material consisting of the oxide underlayer of said magnetic domain control layer is

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a compound of RO consisting of at least R(R=Co, Mg, Ni, Eu, Fe, and Zn) and oxygen (O) and has a NaCl structure and a (200) orientation plane, and a material consisting of said magnetic domain control layer on the oxide underlayer is a compound having a composition of R203 containing at least R (R= Fe, Co, Mn, and Ni) and oxygen (O) and has a spinel lattice and a (400) orientation plane.

13. and 14. (Cancelled)

15. (Original) The magnetoresistive sensor according to claim 1, wherein said magnetic domain control layer is at least partially superimposed on the plane of said magnetoresistive sensor layer.

16. (Original) The magnetoresistive sensor according to claim 1, wherein said magnetoresistive sensor layer is a tunnel magnetoresistive sensor layer.

17. (Withdrawn) A combined magnetic head mounting a write element and a read element, wherein the read element comprises the magnetoresistive sensor according to claim 1.

18. (Cancelled)

19. (Withdrawn) A magnetic recording sensor having a structure comprising a plurality of cells in parallel including a magnetoresistive sensor for recording information, a bit line connected to the magnetoresistive sensor for flowing an

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electric current to the sensor, a word line in the position opposite the bit line by interposing therebetween the magnetoresistive sensor layer and in the position away from the magnetoresistive sensor layer for performing recording operation onto the magnetoresistive sensor layer orthogonally to the bit line, an amplifying system for amplifying a read signal, and a read word line for switching between read and write, wherein the magnetoresistive sensor comprises the magnetoresistive sensor layer, and a layer for magnetic domain-controlling the magnetoresistive sensor layer is provided with the magnetic domain control layer having high electric resistance not less than 10 mΩcm.

20. (Cancelled)

21. (New) A magnetoresistive sensor including a substrate, a pair of magnetic shield layers consisting of a lower magnetic shield layer and an upper magnetic shield layer, a magnetoresistive sensor layer disposed between the pair of magnetic shields, an electrode terminal for flowing a signal current perpendicular to the plane of the magnetoresistive sensor layer, and magnetic domain control layers, wherein a material consisting of said magnetic domain control layer disposed on opposite ends of the magnetoresistive sensor layer in the region from the end surface of the media-opposed surface side of the magnetoresistive sensor layer to the depth position, is a granular layer made by mixing a hard magnetic material having high coercivity made of a metal magnetic material having as the composition elements Co (cobalt), Cr (chromium), Pt (platinum), Ta (tantalum), and Nb (niobium)

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with an insulating material made of Al2O3, SiO2, HfO2, TaO2, TiO2, Ta2O5, AlN, AlSiN, or ZrO2.

22. (New) A magnetoresistive sensor including a substrate, a pair of magnetic shield layers consisting of a lower magnetic shield layer and an upper magnetic shield layer, a magnetoresistive sensor layer disposed between the pair of magnetic shields, an electrode terminal for flowing a signal current perpendicular to the plane of the magnetoresistive sensor layer, and magnetic domain control layers, wherein said magnetic domain control layer disposed on opposite ends of the magnetoresistive sensor layer in the region from the end surface of the media-opposed surface side of the magnetoresistive sensor layer to the depth position comprises a layer made of a soft magnetic oxide material having high electric resistivity disposed in contact with opposite ends of said magnetoresistive sensor layer, and a hard magnetic layer, disposed outside the same, made of a metal magnetic material having as the composition elements Co (cobalt), Cr (chromium), Pt (platinum), Ta (tantalum), and Nb (niobium).